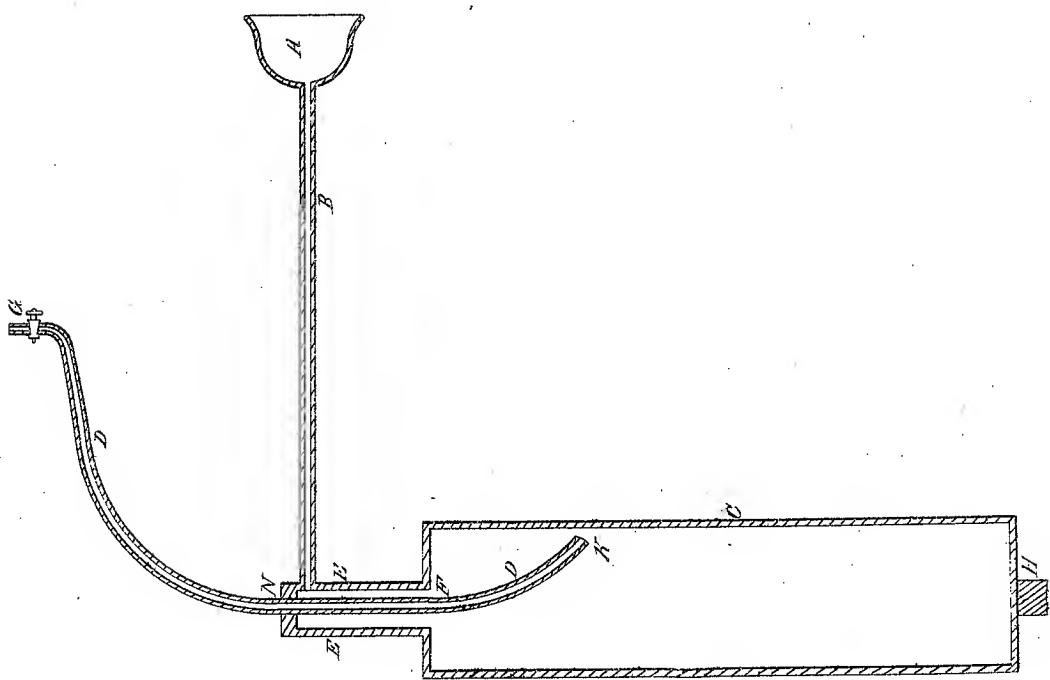
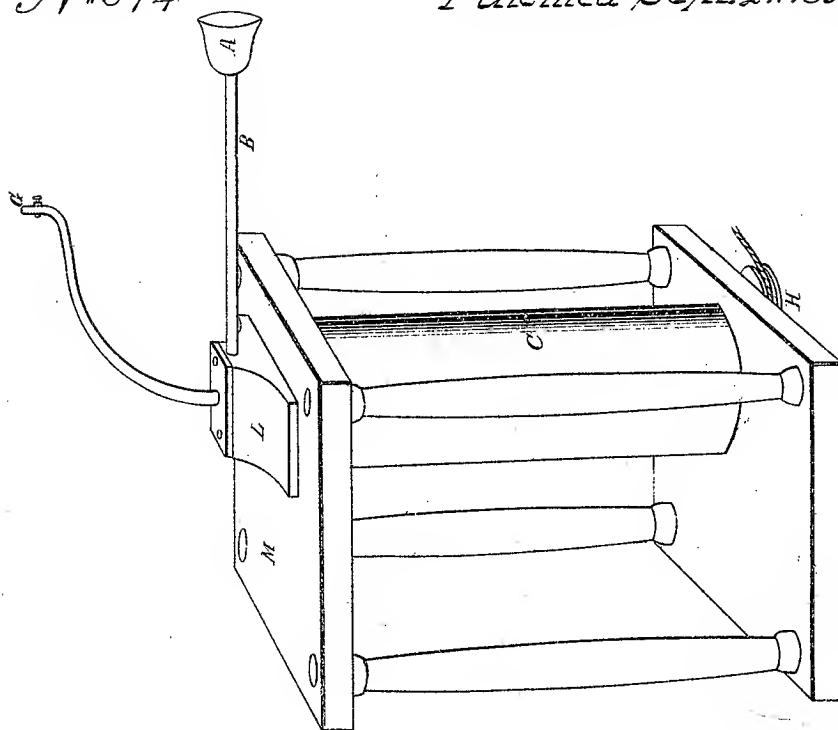


E. N. Arnold.
Inking Rollers.

No 394

Patented Sept 21, 1837.



UNITED STATES PATENT OFFICE.

E. W. ARNOLD, OF BOSTON, MASSACHUSETTS.

MODE OF REGULATING THE TEMPERATURE OF INKING-ROLLERS AND INK USED THEREWITH IN THE INKING APPARATUS OF PRINTING-PRESSES.

Specification of Letters Patent No. 394, dated September 21, 1837.

To all whom it may concern:

Be it known that I, ELIPHAZ WESTON ARNOLD, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have 5 invented, made, and applied to use a new and useful Invention for Regulating the Temperature of Inking-Rollers and Ink Used Therewith for Printing-Presses in the Operation of Printing, which I specify as 10 follows, namely:

The drawing hereto annexed and marked X is to be taken and considered as a part of this specification.

C represents a hollow metallic drum to 15 be made of copper or other metal, of the usual size of inking drums now used for printing presses which drum is to receive the ink from a common distributing roller like those now in use that take it from the 20 ink fountain underneath and from which drum the ink is to be taken in the usual way by inking rollers for inking the form like those now in use. The surface of this hollow metallic drum should be perfectly 25 smooth and the thinness of the metal from the interior to the exterior surface or periphery shall be such, having regard always to the strength of the drum, that hot or cold water when let into the hollow space in the 30 drum may most readily have effect upon the temperature of the ink on the external surface and the inking rollers for inking the form when they shall be brought upon it by the transmission of heat and cold. Both 35 ends of this hollow metallic drum or cylinder are to be solid with journals at each end to support it, and a shaft at one end to which the power which is to move and turn it is to be applied in the usual way. The 40 journal at the end opposite to that to which the power is to be applied is to be made hollow, so that cold or hot water by means of a tube may be introduced into the hollow metallic drum and discharged therefrom as 45 hereinafter mentioned.

A represents a reservoir about a foot more or less above the upper surface of the drum from which the hot or cold water is to be taken.

50 B represents a tube of a size suitable to be introduced at E into the hollow aperture in the journal of the hollow metallic drum so as to conduct the water from the reservoir into the hollow metallic drum. The 55 tube is adjusted to the end of the journal

by means of a flanch at E so that no water may escape between the exterior surface of the inserted tube and the interior surface of the hollow journal.

D, D represents a pipe bent upward at 60 both ends which is to pass through and be fixed at the center of the cavity of the tube B' at N but so that water may pass down the tube and between the interior surface of the tube and the exterior surface of the pipe 65 into the hollow metallic cylinder, and is to extend into the hollow metallic cylinder and to be so bent upward that the end within the hollow metallic cylinder shall reach very nearly to the upper interior surface of 70 the hollow metallic cylinder at the top leaving only room sufficient for the water to pass out freely when it rises to the top or end of the pipe within the hollow metallic cylinder. The other end of this pipe which is 75 without the hollow metallic cylinder is to be bent upward so that the end may be six inches more or less above the top of the hollow metallic cylinder and below the reservoir and is to have a stop cock at the end G 80 by which the water can be let off as occasion may require. This pipe is to be fixed and soldered into the tube at N so that the water may not pass out from the metallic cylinder between it and the tube. The tube is held 85 upright and fast in a box screwed to the frame. When the hot or cold water is brought into the reservoir A as occasion may require for heating or cooling the ink and inking rollers it passes down the tube B and into the hollow metallic cylinder at F by passing between the pipe D D and the interior surface of the tube B and fills the hollow metallic cylinder, and when the stop 90 cock at G is turned so as to let it off it passes through the pipe D D and passes off at G until the water in the reservoir is reduced to the level with the top of the pipe at G. By this means the water may be changed in the hollow metallic cylinder, and by turning the 95 ends of the pipe downward so that it may act as a siphon the water may be wholly drawn from the hollow metallic cylinder as occasion may require. The object of the said invention is to keep the inking rollers 100 and ink as far as may be of a proper temperature for working in hot or cold weather in any climate and to prevent the rollers from melting and the ink from filling up the 105 types in warm weather and to prevent the 110

inking rollers from becoming too hard and the ink from becoming too stiff in cold weather.

What I claim as new and of my invention
5 is—

The heating and cooling and regulating of the temperature of inking rollers and ink in the operation and process of printing by the means aforesaid.

In witness that the above is a true specification of my invention I have hereto set my hand this sixteenth day June in the year of our Lord one thousand eight hundred thirty seven.

ELIPHAZ WESTON ARNOLD.

Witnesses:

P. M. RAND,
JOHN W. PARKER.